

CLAIMS

1. A process for manufacturing hypo-allergenic fruit and/or vegetable derivatives comprising the steps of:

- 5 a) separating the serum of fruits and/or vegetables from the pulp;
- b) ultrafiltrating the serum, in order to obtain a permeate and a retentate,
- c) washing the pulp;
- 10 d) adding the permeate to the pulp.

2. The process according to claim 1 wherein said step a) is preceded by a passage a₀) where a fruit and/or vegetable sieved is obtained by means of crushing, grinding, optionally destoning, thermal treatment and 15 sieving of fruits and/or vegetables.

3. The process according to claim 1 or 2 wherein said step a) is accomplished by means of centrifugation of the fruit and/or vegetable sieved.

4. The process according to claim 3 wherein said sieved 20 product has a solid percentage ranging between 1 and 20%.

5. The process according to claim 4 wherein said sieved product has a solid percentage ranging between 3 and 9%.

25 6. The process according to any claim 1 to 5, wherein

said centrifugation, step a), is carried out by a horizontal axis centrifuge of the decanter type.

7. The process according to claim 6, wherein said centrifugation (step a) is carried out at a speed ranging between 500 and 12.000 rev/min, preferably between 1000 and 5000 rev/min.
- 5 8. The process according to claim 6, wherein said centrifugation (step a) is carried out continuously.
9. The process according to claim 6, wherein said 10 centrifugation (step (a)) is carried out at a temperature ranging between 5 and 90°C, preferably between 18 and 70°C.
10. The process according to any claim 1 to 9, wherein in step a) the amount of pulp obtained ranges between 15 3 and 90%, preferably between 5 and 80%, and the amount of serum ranges between 97 and 10%, preferably between 95 and 20%.
11. The process according to any claim 1 to 10, wherein said ultrafiltration stage, step b), is a 20 ultrafiltration with membranes having a cut-off ranging between 3 and 30 kDa.
12. The process according to claim 11, wherein said membranes have a cut-off ranging between 5 and 15 kDa.
13. The process according to any claim 1 to 12, wherein 25 from the ultrafiltration, step b), 5 - 90% retentate,

preferably 10 - 80%, and 95 - 10% permeate, preferably 90 - 20% are obtained.

14. The process according to any claim 1 to 13, wherein the permeate obtained following ultrafiltration of the
5 serum (step b)) is concentrated by means of reverse osmosis.

15. The process according to claim 14, wherein said reverse osmosis is carried out with membranes having a sodium chloride retention ranging between 99,9 and
10 50%.

16. The process according to claim 15, wherein said membranes for reverse osmosis have a sodium chloride retention ranging between 80 e 60%.

17. The process according to any claim 14 to 16, wherein
15 said retentate that is obtained by means of reverse osmosis has a solid concentration ranging between 5 and 38%, preferably 10 and 20%.

18. The process according to any claim 1 to 17, wherein said washing of said pulp (step c) is carried out
20 using an acidic solution to obtain the acidified pulp.

19. The process according to claim 18, wherein said acidic solution is 0,1 - 5% citric acid solution, preferably about 1%.

20. The process according to any claim 1 to 19, wherein
25 said washing stage (step c) comprises a centrifugation

step of said acidified pulp to obtain the washed pulp.

21. The process according to claim 20, wherein said centrifugation (step c) is carried out at a speed ranging between 500 and 12.000 rev/min, preferably between 1000 and 5000 rev/min.

22. The process according to claim 20, wherein said centrifugation (step c) is carried out continuously.

23. The process according to claim 20, wherein said centrifugation (step c) is carried out at a temperature ranging between 5 and 90°C, preferably between 18 and 70°C.

24. The process according to any claim 1 to 23, wherein said washing step is repeated 1-10 times, preferably 2-5 times.

15 25. The process according to any claim 1 to 24, wherein in said step c), said pulp and said permeate are mixed in a ratio ranging between 1:0,5 e 1:50, such as to obtain the hypo-allergenic fruit and/or vegetable derivate.

20 26. The process according to claim 25 wherein said pulp and said permeate are mixed in a ratio ranging between 1:1 and 1:10.

27. The process according to any claim 1 to 26 wherein in step c), said fruit and/or vegetable derivative contains a solid percentage ranging between 4,5 and

45%, preferably between 5 and 36%.

28. The process according to any claim 1 to 27, wherein said derivative is homogenized, packaged and sterilized.

5 29. The process according to any claim 1 to 28, wherein said derivative is homogenized, packaged and frozen.

30. The process according to any claim 1 to 29, wherein said fruits and/or vegetables are selected from: tomato (*Lycopersicon esculentum*), peach (*Prunis persica*), apricot (*Prunus armeniaca*), cherry (*Prunus avium* and *Prunus cerasus*), apple (*Malus communis*), pear (*Pyrus communis*), carrot (*Daucus carota*), celery (*Apium graveolens*), celeriac (*Apium graveolens rapaceum*).

15 31. The process according to any claim 1 to 30, wherein said fruits and/or vegetables are fresh tomatoes.

32. A product obtainable by means of the process according to any claim 1 to 31, which is a hypo-allergenic fruit and/or vegetable derivative.

20 33. The product according to claim 32, which is hypo-allergenic fruit and/or vegetable juice, nectar, jam, puree, concentrate.

34. The product according to claim 32 or 33, which is hypo-allergenic juice, nectar, jam, puree, concentrate.

25 of tomato (*Lycopersicon esculentum*), peach (*Prunis*

persica), apricot (*Prunus armeniaca*), cherry (*Prunus avium* and *Prunus cerasus*), apple (*Malus communis*), pear (*Pyrus communis*), carrot (*Daucus carota*), celery (*Apium graveolens*), celeriac (*Apium graveolens rapaceum*).

35. The product according to any claim 32 to 34 which is hypo-allergenic juice, puree, concentrate of tomato.